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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,906	09/23/2003	Shun Li Lin	MXIC-P910277	2515

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EXAMINER

CHEN, JACK S J

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,906

Applicant(s)

LIN, SHUN LI

Examiner

Jack Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,10,12-21 and 23-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4-6,10 and 12-20 is/are allowed.
- 6) ☒ Claim(s) 21,23-26 and 28-31 is/are rejected.
- 7) ☒ Claim(s) 27 and 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

In response to the communication filed on September 26, 2005, claims 1-2, 4-6, 10, 12-21, 23-32 are active in this application.

Specification

The amendment filed February 7, 2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Re claim 21, the phrase "the developable anti-reflective coating comprising a component other than photoresist" is not supported by the original specification. While the specification provides the support for using positive or negative resist for the developable anti-reflective coating, does not positively provide any other materials beside resist (No alternative element(s)/material(s) are positively recited in the specification).

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that

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the inventor(s), at the time the application was filed, had possession of the claimed invention. Re claim 21, the phrase "the developable anti-reflective coating comprising a component other than photoresist" is not supported by the original specification. While the specification provides the support for using positive or negative resist for the developable anti-reflective coating, does not positively provide any other materials beside the resist (No alternative element(s)/material(s) are positively recited in the specification).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 21, 23, 26, 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuki, U.S./6,436,772 B2.

Otsuki discloses a method of code programming a ROM device, which comprises providing a substrate 5 having a plurality of code positions (figs. 3A or 4A or 5A), and a first code pattern 6 (fig. 3A) or 13 (fig. 4D) or 14 (fig. 5C) which comprises a plurality of code openings 6c (fig. 3A) or 13a (fig. 4D) or 14a (fig. 5C) that expose substantially all of the code positions (fig. 3A or fig. 4D or 5C); and forming a developable anti-reflective coating 18 (fig. 3D) or 20 (fig. 4E) or 15 (fig. 5D) over the substrate to fill the plurality of code openings, see figs. 1A-5D and cols. 1-8 for more details. Note: photoresist is the developable anti-reflective coating (i.e., photoresist absorbs light).

Re claim 23, wherein the first code pattern comprises a plurality of code openings formed in a dielectric material 6 (fig. 3A).

Re claim 26, further comprising removing a portion of the developable anti-reflective coating to form a second code pattern (i.e., removing to expose layer 2, fig. 3D or layer 6, fig. 4E or 5D), the second code pattern including less than all of the plurality of code openings.

Re claim 28, wherein the developable anti-reflective coating is formed over the substrate without an etch-back process to expose portions of the first code pattern (i.e., figs. 5D or 4E or 3D).

Re claim 29, wherein the method is effective to provide a relatively wider photo process window compared to a substantially identical method practiced without a developable anti-reflective coating (i.e., figs. 5D or 4E).

Re claim 30, wherein the developable anti-reflective coating is removed by controlling at least one of baking temperature and light exposure (inherently shows this feature since photoresist is considered as the developable anti-reflective coating).

However, Otsuki does not explicitly show that the developable anti-reflective coating comprising a component other than photoresist. In this regard, the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co., Inc. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

"Reading a list and selecting a known compound to meet known requirements is no more ingenious than selecting the last piece to put in the last opening in a jig - saw puzzle." 65 USPQ at 301.). Furthermore, the specification contains no disclosure of either the critical nature of the claimed material or any unexpected results arising therefrom. Where patentability is said to be

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based upon particular chosen limitations or upon another variable recited in a claim, the Applicant must show that the chosen limitations are critical. *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990).

Therefore, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to use any suitable material as the developable anti-reflective coating in the method of Otsuki in order to absorb radiation/light, etc.

3. Claims 21, 23-26, 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al., U.S./6,689,663 B1.

Chang et al. disclose a method of code programming a ROM device, which comprises providing a substrate 10 (fig. 1) or 21 (fig. 6) having a plurality of code positions, and a first code pattern 14 (fig. 3) or 28 (fig. 6) which comprises a plurality of code openings that expose substantially all of the code positions; and forming a developable anti-reflective coating 18 (fig. 4) or 31 (fig. 8) over the substrate to fill the plurality of code openings, see figs. 1-9 and cols. 1-14 for more detail. Note: photoresist/resist is considered as the developable anti-reflective coating.

Re claim 23, wherein the first code pattern comprises a plurality of code openings formed in a dielectric material 14 (fig. 3).

Re claim 24, wherein the dielectric material comprises silicon dioxide (fig. 1, col. 6, lines 35-40).

Re claim 25, wherein the developable anti-reflective coating is formed by a spin on coating method (col. 6, lines 45-50).

Re claim 26, further comprising removing a portion of the developable anti-reflective coating to form a second code pattern (figs. 4 or 8, removing at least a portion of the developable anti-reflective coating to expose layer 12 or 17), the second code pattern including less than all of the plurality of code openings.

Re claim 28, wherein the developable anti-reflective coating is formed over the substrate without an etch-back process to expose portions of the first code pattern (figs. 4 or 8).

Re claim 29, wherein the method is effective to provide a relatively wider photo process window compared to a substantially identical method practiced without a developable anti-reflective coating (figs. 4 or 8).

Re claim 30, wherein the developable anti-reflective coating is removed by controlling at least one of baking temperature and light exposure (col. 8, lines 10-30).

Re claim 31, wherein the developable anti-reflective coating is removed by exposing the developable anti-reflective coating to a photo developer (col. 6, lines 40-45 and col. 8, lines 10-30, etc.).

However, Chang does not explicitly show that the developable anti-reflective coating comprising a component other than photoresist. In this regard, the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co., Inc. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

"Reading a list and selecting a known compound to meet known requirements is no more ingenious than selecting the last piece to put in the last opening in a jig - saw puzzle." 65 USPQ at 301.). Furthermore, the specification contains no disclosure of either the critical nature of the claimed material or any unexpected results arising therefrom. Where patentability is said to be

based upon particular chosen limitations or upon another variable recited in a claim, the Applicant must show that the chosen limitations are critical. *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990).

Therefore, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to use any suitable material as the developable anti-reflective coating in the method of Chang et al. in order to absorb radiation/light, etc.

Allowable Subject Matter

4. Claims 27 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is an examiner's statement of reasons for allowance: the prior art of record neither teach nor make obvious the claimed limitation of the instant application as a whole (in addition to the base claim) as recited in claims 27 and 32, respectively.

6. Claims 1-2, 4-6, 10, 12-20 are allowable over the prior art of record.

7. The following is an examiner's statement of reasons for allowance: the prior art of record neither teach nor make obvious the claimed limitation of the instant application as a whole as recited in claim 1. In particular, the prior art does not teach or suggest the particular subset of the process steps for code programming a ROM device by forming a second implant resistant layer over the developable anti-reflective coating layer; processing a portion of the second implant resistant layer to form a second code pattern which comprises a portion of the code openings of the first code pattern; and

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removing the developable anti-reflective coating layer from the code openings of the second code pattern.

Response to Arguments

Applicant's arguments with respect to claims 21, 23-32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Chen whose telephone number is (571)272-1689. The examiner can normally be reached on Monday-Friday (9:00am-6:30pm) alternate Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead can be reached on (571)272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jack Chen
Primary Examiner
Art Unit 2813

April 16, 2006